

Accountability Report 2014–2015

Department of Environment ◀



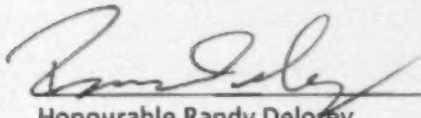
Table of Contents

Accountability Statement	2
Message from the Minister	3
1. Financial Results	5
2. Strategic Outcomes, Priority Projects and Accomplishments	6
3. Measuring Our Performance:	
<i>Environment Act – Clean Air</i>	12
<i>Environment Act – Clean Drinking Water</i>	18
<i>Wilderness Areas Protection Act and Special Places Protection Act –</i>	
Protected Natural Areas	20
<i>Environmental Goals and Sustainable Prosperity Act –</i>	
Reduced Solid Waste Disposal	22
<i>Environmental Goals and Sustainable Prosperity Act –</i>	
Greenhouse Gas Emissions	24
<i>Environmental Goals and Sustainable Prosperity Act –</i>	
Ambient Ground Level Ozone and Fine Particulate Matter	26
<i>Environmental Goals and Sustainable Prosperity Act –</i>	
Wastewater Treatment Facilities	29
Appendix A – Annual Report under Section 18 of the <i>Public Interest Disclosure of Wrongdoing Act</i>	

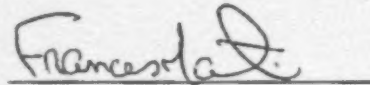
Accountability Statement

The Accountability Report of Nova Scotia Environment for the year ended March 31, 2015 is prepared pursuant to the *Finance Act* and government policies and guidelines. These authorities require the reporting of outcomes against Nova Scotia Environment's Statement of Mandate for the fiscal year just ended. The reporting of the Department's outcomes necessarily includes estimates, judgments and opinions by Nova Scotia Environment management.

We acknowledge that this Accountability Report is the responsibility of Department management. The report is, to the extent possible, a complete and accurate representation of outcomes relative to the goals and priorities set out in the Nova Scotia Environment's 2014-2015 Statement of Mandate.



Honourable Randy Delorey
Minister of Environment



Frances Martin
Deputy Minister of Environment

Message from Minister

I am pleased to provide you with Nova Scotia Environment's Accountability Report for the fiscal year 2014-2015. The report outlines the department's success in meeting its goals as set out in its 2014-2015 Statement of Mandate.

This past year, the department continued its work to modernize regulations under the Environment Act. Regulatory changes to watercourses were implemented, and staff consulted with industry on proposed changes to the On-site Sewage Disposal Systems Regulation. The department will continue its work to update the On-site regulation in the current fiscal year.

In 2014-2015, the department released a *What We Heard* document that reflects feedback received during consultations on the province's Solid Waste Regulation. The regulatory changes, which will be finalized this fall, will divert more waste from landfills.

An environmental complaints handling policy was piloted in the Western region last summer. The primary aim of the policy is to ensure a consistent approach across the department, and through increased awareness, help Nova Scotians know what to do when they suspect an environmental law has been broken and what happens after they report it. Feedback received from members of the public and staff during the pilot phase was incorporated into the final policy that was implemented June 1.

The department has new air quality requirements for the electricity sector that will improve air quality for Nova Scotians and offer potential savings on power rates for the next two years. The new regulation will replace annual limits on Nova Scotia Power's generating stations and add annual limits on sulfur dioxide emissions in communities with generating stations. The limits will also require deeper reductions out to 2030.

This past year, the federal government and Nova Scotia Environment finalized the equivalency agreement regarding greenhouse gas emissions from coal-fired electricity generation. It is the first agreement of its kind in Canada and will protect Nova Scotian ratepayers from unnecessary increases while achieving deep greenhouse gas emissions reductions in the electricity sector. The agreement officially takes effect in July 2015.

Legally protecting sites identified in the province's Parks and Protected Areas Plan was another focus of the department in 2014-2015. Twenty (20) sites were officially protected as wilderness areas or nature reserves. The work to legally protect other sites identified in the plan will continue this year as the department moves closer to the Environmental and Sustainable Prosperity Act (EGSPA) goal of protecting at least 12 per cent of the province's landmass by 2015.

Last year, 12 projects were registered for environmental assessment, and five new wind energy projects were approved. The wind farms, together with tidal power, are helping to build renewable energy options in Nova Scotia.

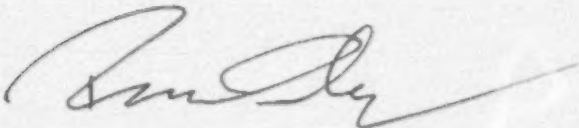
The current fiscal year is shaping up to be an equally productive and successful one. In addition to the ongoing projects noted above, two key documents are in the works. The first includes developing a report this fall on our progress to date toward meeting Nova Scotia's climate changes goals. And, in concert with our colleagues in key departments across government, the department will finalize a strategy to guide the "greening" of our economy.

As part of the province's work to build a stronger regulatory regime, the department released a discussion paper for public comment in May outlining proposed administrative penalties. The monetary penalties, which are designed to deter or penalize those who harm the environment, would bring the department in line with national trends and standards. Later this year, the department will also introduce new public consultation guidelines for approval holders.

New provincial air management zones that align with the national Air Quality Management System have been implemented.

Another key component of this year's work will be to create a new enforcement division within Nova Scotia Environment. By combining environmental inspection, compliance and enforcement functions into one department, the province can develop a more unified, coordinated approach that can lead to improved protection of the public's health, our natural resources and our environment.

Thank you to the staff of Nova Scotia Environment for their dedication and commitment to the work of the department on behalf of Nova Scotians. Thank you also to the people of our province for engaging with me on issues affecting Nova Scotia's environment and their ideas for helping to protect it. I encourage Nova Scotians to continue this dialogue with me. My address is Minister.Environment@novascotia.ca.



Randy Delorey
Minister of Environment

1. Financial Results

Nova Scotia Environment			
Program and Service Area	2014/15 Estimate (\$ thousands)	2014/15 Actual (\$ thousands)	Variance (\$ thousands)
Ordinary Revenues, Fees and Recoveries	\$4,534	\$5,287	753
TCA Purchase Requirements	\$630	1,394	764
Administration	\$963	\$932	(31)
Policy	\$4,838	\$5,110	272
Compliance	\$12,345	\$11,651	(694)
Sustainability & Applied Science	\$8,338	\$8,170	(168)
Total Gross Program Expenses	\$26,484	\$25,863	(621)
Funded Staff (FTEs)	250	229	(21)

2. Strategic Outcomes, Priority Projects and Accomplishments

In the Statement of Mandate for 2014-2015, Nova Scotia Environment (NSE) provided examples of priority projects planned for the year under three Strategic Outcomes. The strategic outcomes are based on our Mandate and linked to the Vision, Mission, Performance Measures and Government's priorities.

NSE shows the progress made in achieving our mandate and government priorities through the performance measures on pages 12-30 and through the accomplishments of priority projects examples as provided below.

Strategic Outcome #1:

Protection, enhancement and prudent use of the environment

- **Example of project: Modernization of the Regulations**

What We Said

In 2014-2015, NSE will continue to modernize regulations to align our resources with those activities that pose the greatest risk to our environment. This also introduces new efficient processes that ensure more routine and lower risk activities can be responsibly carried out by qualified individuals. NSE will intervene as necessary to ensure compliance with environmental requirements.

These efforts will help us ensure the most sustainable, cost-effective delivery of our services in the coming years while supporting a sustainable economy.

What We Did

NSE is allowing some activities to be subject to notifications rather than approvals, as long as those activities are done in accordance with a standard. This will result in less regulatory burden for industry because they will not have to wait for an approval, and there will be less associated paperwork. It will allow departmental resources to be used more efficiently and directed toward higher-risk activities. The changes would make government more effective in delivering programs without presenting additional risk to the environment.

Regulatory amendments have already been made to allow many types of watercourse alterations to be done through notification, and there are further proposed amendments to allow most types of on-site sewage systems to be done through notifications.

- **Example of project: Implementation of Contaminated Sites Regulations**

What We Said

Implementing the Contaminated Sites Regulations, which became effective in July 2013, allows for further protection, timely cleanups, and enhancement of the environment. Through these Regulations, NSE will explore incentives and funding for Brownfield redevelopment. This creates both environmental and economic benefits at the same time.

What We Did

The implementation of the Contaminated Sites Regulations has resulted in greater protection and enhancement of the environment by establishing clear and consistent requirements for the notification, assessment and remediation of contaminated sites. The Regulations and seven supporting Ministerial Protocols outline the requirements for various cleanup options applicable to all types of contaminated sites.

The flexibility of the Regulations and ability to choose remediation pathways on a site specific basis provide both environmental and economic benefits. While NSE continues to explore incentives for Brownfield redevelopment, the choice now available under the Regulations to obtain a Declaration of Property Condition and thereby relief of regulatory liability supports the redevelopment of Brownfield sites.

- **Example of project: Solid Waste Regulations Review**

What We Said

NSE is reviewing its Solid Waste Regulations to encourage greater waste diversion. Diverting waste from disposal not only protects the environment but also increases economic activity and job creation. Additional consultation and engagement with municipalities and other key stakeholders is planned for 2014-2015.

What We Did

Following initial public consultation on proposed changes to the Solid Waste Regulations, additional consultation and engagement with municipalities and other key stakeholders took place in 2014, closing in September 2014. Feedback on the consultations was compiled into a "What We Heard" document which was released in March 2015. NSE continues to work collaboratively with municipalities and producers to develop the draft regulations.

- **Example of project: Drinking Water Program Renewal**

What We Said

NSE is renewing the 2002 Drinking Water Strategy and will develop a ten-year implementation plan to ensure continuous improvement of the drinking water program. Protecting human health and the environment by renewing the drinking water program helps to ensure that individuals will continue to have clean and safe water for consumption, recreation, and livelihoods.

What We Did

Progress continues on the renewal of the 2002 Drinking Water Strategy and the development of a ten-year implementation plan. The Renewal Team has established goals and objectives, identified key decision points and are now working to identify program improvements.

Strategic Outcome #2:

Establishment and management of wilderness areas and nature reserves for protection of biodiversity, for public understanding and appreciation and for prudent use

NSE's mandate to protect wilderness areas and nature reserves is governed by the *Wilderness Areas Protection Act* and the *Special Places Protection Act*. Working with the Department of Natural Resources, in August 2013, "Our Parks and Protected Areas – A Plan for Nova Scotia" was released. The Plan identified lands to be protected, as well as specific goals for an integrated parks and protected areas system. This Plan supports the goal contained in the *Environmental Goals and Sustainable Prosperity Act* to protect at least 12 per cent of the total land mass of the Province by 2015.

- **Example of project: Implementation of Parks and Protected Areas Plan**

What We Said

The first priority project for 2014-2015 is to continue the legal protection of areas included in the Plan.

Protecting our provincial lands ensures that these areas continue to thrive and also that Nova Scotia's park system is updated to secure and strengthen its long-term success. As well, protecting at least 12 per cent of provincial lands contribute to economic growth by providing a range of natural services, supporting outdoor

recreation and tourism industries, and helping to brand Nova Scotia as a clean, green place in which to live, work, and do business.

What We Did

In 2014-2015, the province made significant progress in completing the survey and technical work needed to advance sites from the 2013 Parks and Protected Areas Plan for legal designation. Negotiations with third party rights holders were also significantly advanced to support these designations. In December 2014, an additional 14,691 hectares of land at 20 sites was legally protected, bringing the total of land protection in Nova Scotia from 9.32 per cent to 9.58 per cent.

Other actions from the Parks and Protected Areas Plan were also advanced in 2014-2015, including holding a successful inaugural parks and protected areas forum, advancing numerous trail projects, creating new partnership for scientific research, and supporting private land conservation initiatives with partners.

- **Example of project: Implementation of Parks and Protected Areas Plan**

What We Said

Another priority project in 2014-2015 is to identify, prioritize, and address legal commitments, threats to biodiversity and opportunities for safe public use.

What We Did

In 2014-2015, NSE advanced an initiative to identify and address numerous high ecological and public risk sites associated with abandoned infrastructure, dump sites, and illegal activities. This initiative also considered the enhancement and stabilization of allowable infrastructure at several sites.

Discussions are also advancing with several partners in relation to realizing social and economic benefits from certain wilderness areas, including islands and headlands of Eastern Shore Islands Wilderness Area, interior lakes and forests of Medway Lakes Wilderness Area, and trail opportunities at various sites, including Blue Mountain-Birch Cove Lakes Wilderness Area.

Strategic Outcome #3:

Recognition of the interdependence of economic, environmental and social health and the significance of environmental assets to long-term prosperity

One way NSE's work of protecting the environment and human health is closely linked to economic outcomes is through the *Environmental Goals and Sustainable Prosperity Act*. The overall long-term objective of the Act is to achieve sustainable prosperity.

- **Example of project: Equivalency Agreement-Greenhouse Gas (GHG) Emissions Regulation**

What We Said

Nova Scotia is negotiating with the federal government on an equivalency agreement on their proposed Coal-Fired GHG Electricity Regulation. The goal is to minimize the financial impacts of the Federal Coal-Fired GHG Electricity Regulation in Nova Scotia while maximizing emissions reductions for protection of the environment and human health. The Agreement will ensure the same or better GHG reductions as the Federal Regulation but in a less costly way for business and households than the Federal Regulation.

What We Did

Nova Scotia and the Federal Government signed a Coal-fired GHG *Equivalency Agreement* in June, 2014. This agreement allows the Federal government to exempt Nova Scotia from the proposed Federal regulation of coal-fired GHG as long as Nova Scotia meets its existing 2020 targets and adds additional reduction targets for 2021-2030. This historic agreement will allow Nova Scotia to reach its own GHG reduction targets along with the Federal targets.

- **Example of Priority Project: Green Economy Strategy**

What We Said

Through the *Environmental Goals and Sustainable Prosperity Act* amendments in 2012, a new goal was added for government to develop a strategy by the end of 2014 to further expand and promote our green economy to address the *EGSPA* vision of integrating our economy and environment. The goal of a proposed Green Economy Strategy is to provide guidance and strategies for furthering the "greening" of our overall economy. This goal supports the growing recognition that "greening" the overall economy brings not only environmental and resource sustainability, but also long-term economic benefits.

What We Did

The Round Table on the Environment and Sustainable Prosperity (Round Table) led a public consultation on a draft Greener Economy Strategy in the fall of 2014, as requested by the Minister of Environment. The Round Table presented recommendations, based on the feedback from the consultations, to NSE for review and consideration. In budget 2015, government announced major changes to how it will conduct activities to support economic prosperity. This included the creation of a new Department of Business. While this has resulted in a delay in the release of a final strategy, it is important to make sure all efforts are aligned. NSE and the Department of Business will be collaborating to move forward on the strategy in 2015.

- **Example of Priority Project: Wastewater Standards for Nova Scotia**

What We Said

Nova Scotia is developing a provincial wastewater standard that will incorporate the objectives of the Municipal Wastewater Effluent (MWWE) Strategy. Nova Scotia signed this Canada-wide strategy, developed by the Canadian Council of Ministers of the Environment (CCME), in 2009. The main objectives of the strategy are to improve human health and environmental performance and improve clarity about the way municipal wastewater is managed and regulated. These new Wastewater Standards for Nova Scotia will improve treatment of wastewater before it is discharged to the environment and reduce the risks posed to human and environmental health.

What We Did

NSE consulted with municipalities on a draft provincial wastewater standard and shared a summary of the results of that consultation in 2014. NSE is currently working on finalizing the standard and planning for its implementation. NSE is also working with the federal government to discuss roles and responsibilities related to federal Wastewater Regulations, published in 2012, that require treatment of high risk discharges by the year 2020.

3. Performance Measures

The status of Nova Scotia Environment's (NSE) performance measures contained in the 2014-2015 Statement of Mandate, demonstrates the progress we made in achieving our mandate of protecting the environment. These updates are summarized below and on the subsequent pages of this report.

Mandate: *Environment Act*

Outcome:

Clean air for human health and environmental protection.

Measure:

Annual total sulphur dioxide (SO₂) air emissions (tonnes) into the atmosphere by NSPI.

Target:

The 2014 target (which is 72,500 tonnes), is for NSPI to achieve a 50 per cent reduction in SO₂ emissions from their 1995 cap of 145,000 tonnes, to no greater than 20,000 tonnes by 2030 (a full 86 per cent reduction). These caps are outlined in the table below:

Year	Cap (tonnes)
2010	72,500
2015 - 2019	≤ 304,500 total with ≤ 72,500 per year
2020	≤ 36,250
2021 - 2024	≤ 136,000 total with ≤ 36,250 per year
2025	≤ 28,000
2026 - 2029	≤ 104,000 total with ≤ 28,000 per year
2030	≤ 20,000

Note: The Air Quality Regulations were amended in November 2014. Starting in 2015, a multi-year compliance comprising annual maximums with hard caps every five years is required.

Why this Measure and Target(s)?

SO₂ contributes to the formation of smog and acid precipitation, which have negative effects on human health and the environment. In Nova Scotia, most of the SO₂ emissions are produced by thermal electric power generation. The purpose of this

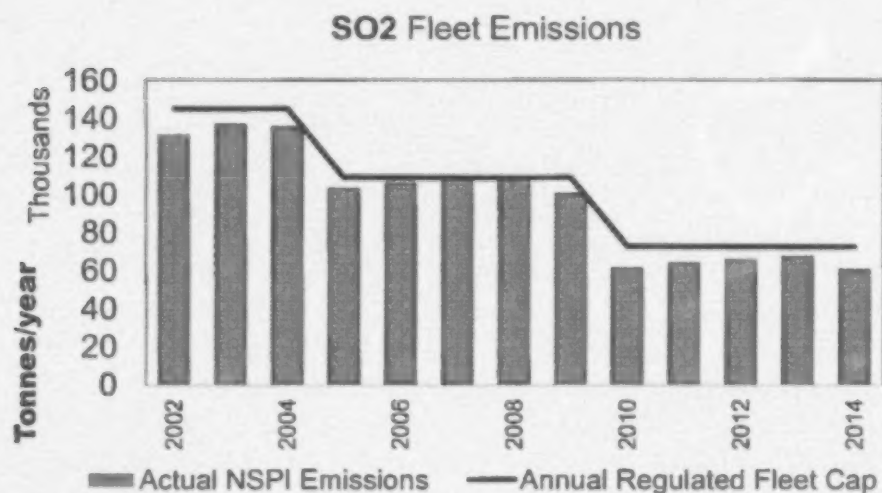
measure and targets is to limit NSPI's (the largest emitter in the province) SO₂ emissions to reduce smog and acid precipitation.

Strategic Actions Taken to Achieve the Target:

- Regulations, and subsequent amendments to the Regulations, were created by NSE to set emissions caps for NSPI and require them to report annually to the Department to demonstrate progress in meeting these caps.

2014-2015 Results:

In 2014, NSPI emitted 60,902 tonnes of SO₂ into the atmosphere, which was less than the emissions cap of 72,500 tonnes. NSPI complied with the regulated cap and has emitted under the cap in recent history.



Ultimate Goal:

Our ultimate goal is to have clean air for human health and environmental protection. This includes the goal for this measure which is to have NSPI continue to meet the caps in the Air Quality Regulations, resulting in cleaner air.

Mandate: *Environment Act*

Outcome:

Clean air for human health and environmental protection.

Measure:

Annual total nitrogen oxide (NO_x tonnes) emitted into the atmosphere by NSPI.

Target:

The 2014 target is for NSPI to meet their annual NO_x emissions cap, set in 2009, of 21,365 tonnes, or 20 per cent less than the base year 2000, to no greater than 8,800 tonnes by 2030 (69 per cent less than base year emissions of 26,706 tonnes). These caps are outlined in the table below.

Year	Cap (tonnes)
2009	21,365
2015 - 2019	≤ 96,140 total with ≤ 21,365 per year
2020	≤ 14,955
2021 - 2024	≤ 56,000 total with ≤ 14,955 per year
2025	≤ 11, 500
2026 - 2029	≤ 44, 000 total with ≤ 11,500 per year
2030	≤ 8, 800

Note: The Air Quality Regulations were amended in November 2014. Starting in 2015, a multi-year compliance comprising annual maximums with hard caps every five years is required.

Why this Measure and Target(s)?

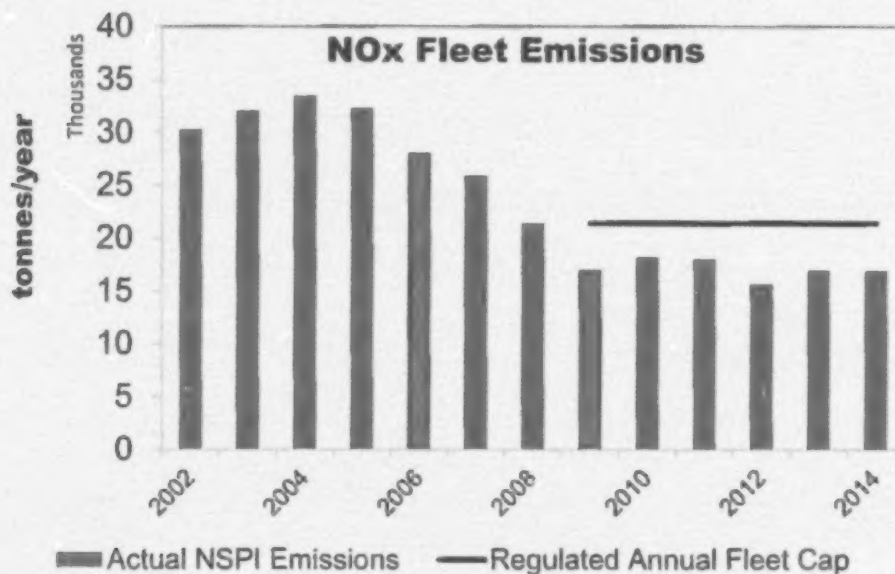
NO_x contributes to the formation of smog and acid precipitation, which have negative effects on human health and the environment. In Nova Scotia, NO_x emissions are produced by a variety of sources, including thermal electric power generation. The purpose of this measure and targets is to limit NSPI's NO_x emissions to reduce smog and acid precipitation. NSPI is a significant emitter of NO_x in the province.

Strategic Actions Taken to Achieve the Target:

- Regulations, and subsequent amendments to the Regulations, were created by NSE to set emissions caps for NSPI and require them to report annually to the Department to demonstrate progress in meeting these caps.

2014-2015 Results:

In 2014, NSPI emitted 16,902 tonnes of NO_x into the atmosphere, which was a 40 per cent decrease from their 2000 emissions levels and below the emissions cap of 21,365 tonnes. NSPI complied with the regulated cap and has emitted under the cap in recent history.



Ultimate Goal:

Our ultimate goal is clean air for human health and environmental protection. This includes the goal for this measure which is to have NSPI continue to meet the caps in the Air Quality Regulations, resulting in cleaner air.

Mandate: *Environment Act*

Outcome:

Clean air for human health and environmental protection.

Measure:

Annual total mercury air emissions (kg) from NSPI's coal-fired electric power generating stations.

Target:

The target is for NSPI to meet mercury emissions caps for their coal-fired electrical power stations because NSPI is the largest mercury emitter in the province. The first cap was set in 2005 at 168 kg. There are declining emissions caps until 2030 with a final cap of 30 kg, which is 89 per cent less than baseline. These caps are outlined in the table below:

Year	Cap (kg)
2005	168
2010	110
2011-2012	100
2013	85
2014	65
2020	35
2030	30

Note: The Air Quality Regulations were amended in November 2014, which extended the cap for mercury emissions to 2030.

Why this Measure and Target(s)?

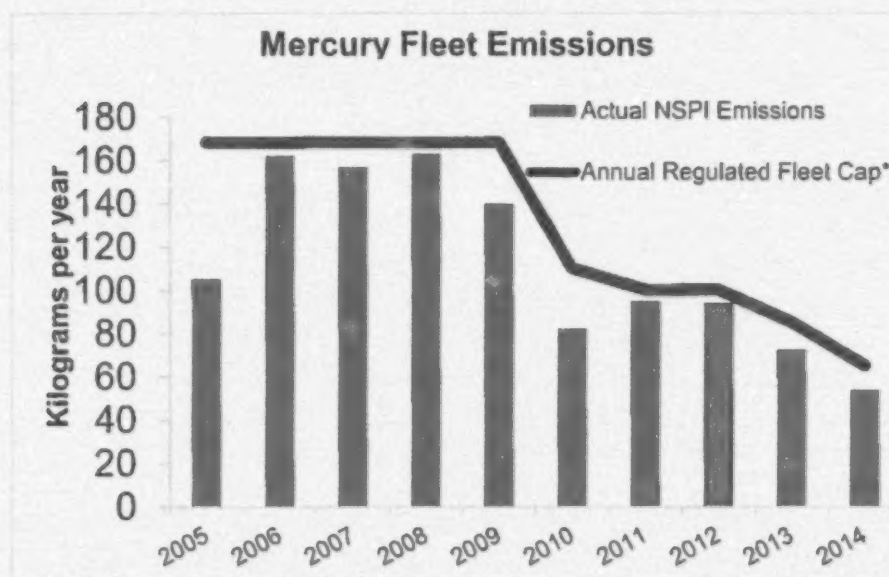
Mercury is a neurotoxin that persists in the environment and accumulates in the food chain. It can have negative effects on human health. Coal-fired electric power generation plants account for the vast majority of mercury emissions in Nova Scotia. The purpose of this measure and targets is to reduce the negative impacts of mercury on the environment and human health.

Strategic Actions Taken to Achieve the Target:

- Regulations, and subsequent amendments to the Regulations, were created by NSE to set emissions caps for NSPI and require them to report annually to the Department to demonstrate progress in meeting these caps.

2014 - 2015 Results:

In 2014, NSPI's mercury emissions were 53.95 kg, which is below the emissions cap of 65 kg for 2014. NSPI was in compliance with the regulated target.



Ultimate Goal:

Our ultimate goal is clean air for human health and environmental protection. This includes the goal for this measure which is for NSPI to continue to meet the mercury emissions caps set out in the Air Quality Regulations, resulting in cleaner air.

Mandate: Environment Act

Outcome:

Clean and safe drinking water.

Measure:

Percentage of population served by municipal water supplies that meet the health-based criteria for microbiological quality.

Target:

The annual target is to maximize the percentage of the population, served by municipal drinking water supplies, meeting the health-based criteria for microbiological quality, as stated in the "Guidelines for Canadian Drinking Water Quality," at all times during the calendar year.

Why this Measure and Target(s)?

Approximately 65 per cent of Nova Scotians obtain their drinking water from municipal drinking water supplies. Health Canada, together with provincial health and environment ministries, has established the "Guidelines for Canadian Drinking Water Quality." This document specifies the health-based criteria for a number of parameters, including maximum acceptable concentrations for total coliforms and *E. coli* bacteria. NSE tracks the proportion of people serviced by municipal drinking water supplies who have access to drinking water that meet the health-based criteria for microbiological quality. The target demonstrates NSE's commitment to clean and safe drinking water for Nova Scotians.

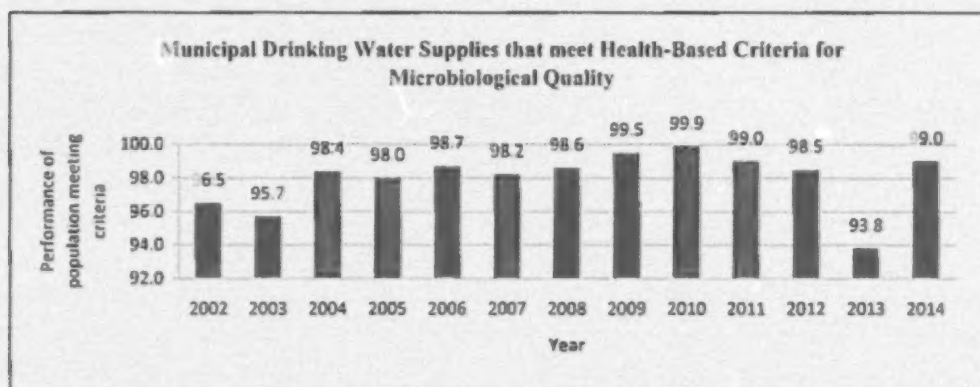
Strategic Actions Taken to Achieve the Target:

- Continued to implement "Water for Life: Nova Scotia's Water Resource Management Strategy."
- Reviewed how Nova Scotia implemented the recommendations of the Walkerton Inquiry and identified areas for improvement.
- Continued the renewal of the Drinking Water Strategy.
- Supported development of municipal water supply protection plans.

2014-2015 Results:

The percentage of the population served by municipal drinking water supplies that meet the health-based criteria for microbiological quality for 2014 was 99.0 per cent. This is

an increase over the previous year when a boil water advisory was issued at a water supply that serves a large population. The 'population affected' by a boil water advisory was significantly lower in 2014 which increased the percentage of the population served who received water meeting the health-based criteria for microbiological quality.



Ultimate Goal:

Our ultimate goal is to have clean and safe drinking water. This includes our ongoing goal and annual target of maximizing the percentage of the population served by municipal drinking water supplies that meet the health-based criteria for microbiological quality. As this measure is about municipal drinking water supplies, it does not measure non-municipal drinking water supplies. There are a variety of mechanisms in place for non-municipal protection such as the well construction regulations, which require proper construction of wells by certified professionals.

Mandate: *Wilderness Areas Protection Act* and *Special Places Protection Act*

Outcome:

A system of protected natural areas with biodiversity effectively conserved and with a range of environmental and social benefits to Nova Scotians.

Measure:

Total hectares of land protected through NSE *Wilderness Areas Protection Act*, and *Special Places Protection Act* - ecological sites.

Target:

The annual target is to increase the hectares of land under various protection options.

Note: EGSPA has a goal to "protect at least 12 per cent" of Nova Scotia's total land mass by 2015.

Why this Measure and Target(s)?

This measure and target tells us how much land is legally protected as wilderness areas under the *Wilderness Areas Protection Act* and as ecological sites (nature reserves) under the *Special Places Protection Act*.

This measure provides an indication of the state of biodiversity conservation in the province as protected areas provide habitat for a wide range of species. As well, protected lands contribute to economic growth by providing a range of natural services, supporting outdoor recreation and tourism industries, and helping to brand Nova Scotia as a clean, green place in which to live, work, and do business.

Strategic Actions Taken to Achieve the Target:

In 2014-2015, we continued to make progress on the goal of protecting at least 12 per cent of the total land mass of the province.

- Concluded a multi-year agreement with the Nova Scotia Nature Trust (NSNT) which resulted in the transfer of 13 sites totaling 613 hectares of land to the province for protection - valued at more than \$1,789,000. These lands were matched with the conservation of more than \$6,000,000 worth of land by the NSNT.
- Negotiations with affected third party rights holders are nearing completion, with clear mechanisms (including licensing) being put in place to accommodate drinking water and electrical infrastructure needs, and address mineral exploration rights.
- Continued work on wood supply analysis for select sites.

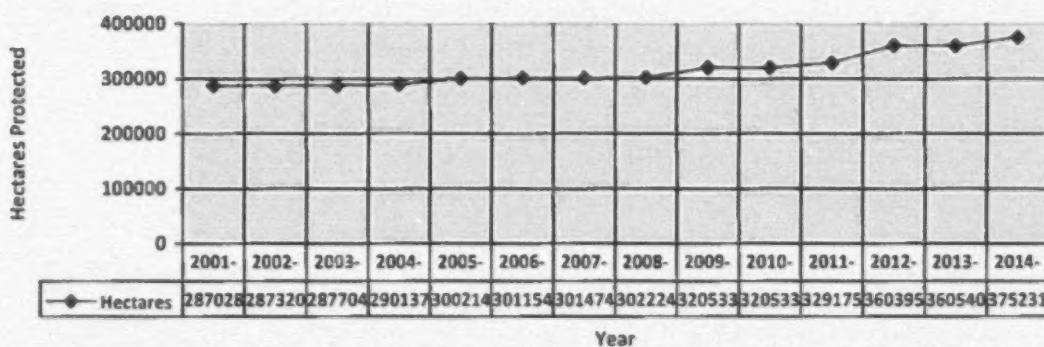
- Trail management arrangements for certain off-highway vehicle access routes have been addressed with provincial and regional all-terrain vehicle and snowmobile organizations.
- The Province is continuing discussions with Nova Scotia Mi'kmaq on the designation of specific sites, as well as access and use of protected areas.
- NSE made significant progress in completing survey plans and documentation to support the legal protection of sites within the 2013 Parks and Protected Areas Plan, with one "package" of lands advanced for legal protection, and others well-advanced in this process.

2014-2015 Results:

In December 2014, the province announced the legal protection of an additional 14,691 hectares of land at four wilderness area and 16 nature reserve sites. As of March 31, 2015, NSE protected a total of 375,231 hectares throughout the province as wilderness areas and nature reserves.

While this measure only applies to NSE, all these other lands, as referenced below, contribute to reaching the *EGSPA* 2015 goal. Including other qualifying lands, approximately 529,671 hectares or 9.58 per cent of Nova Scotia was legally protected as of March 31, 2015.

Hectares of Land Protected as Wilderness Areas or Nature Reserves



Ultimate Goal:

Our ultimate goal is to have a system of protected natural areas with biodiversity effectively conserved and with a range of environmental and social benefits to Nova Scotians. This includes the *EGSPA* 2015 goal. In addition to wilderness areas and nature reserves, lands protected under the *National Parks Act*, *Conservation Easements Act*, and *Canada Wildlife Act*, as well as conservation-oriented lands protected under the *Provincial Parks Act*, and conservation lands held by non-government charitable land trusts also contribute to the *EGSPA* 2015 goal.

Mandate: *Environment Act and Environmental Goals and Sustainable Prosperity Act (EGSPA)*

Outcome:

Reduced solid waste disposal for a better environment and stronger economy.

Measure:

Annual solid waste disposal per capita (kg/person). Our goal is 300 kg/person by 2015 and is tracked by using the reports from the seven Nova Scotia municipal solid waste regions.

Target:

Achieve a disposal rate of no greater than 300 kg/person by 2015.

Why this Measure and Target(s)?

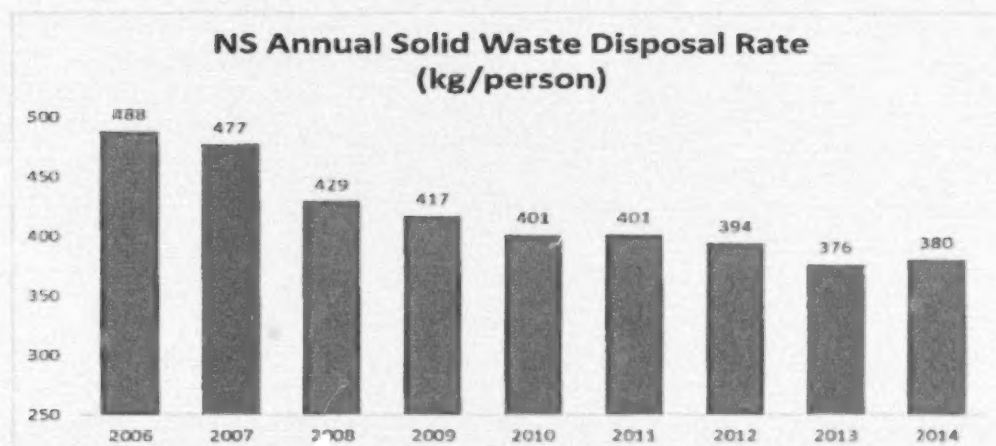
A goal of 300 kg/person was adopted as a challenging goal that would allow Nova Scotia to maintain and strengthen its claim to having the lowest disposal rate in Canada. This demonstrates our desire to divert resources from disposal sites in order to protect the environment and create new jobs and businesses. The latest results available (2012) show that Nova Scotia is 45 per cent below the national average of 720 kg/person.

Strategic Actions Taken to Achieve the Target:

- A regulatory review of the Solid Waste Regulation has been completed and draft regulations are being prepared by staff following consultation with stakeholders.

2014-2015 Results:

In 2014-2015, 380 kg per person was achieved. The initial target was to have a disposal rate of no more than 300 kg/person by 2015. Although the 300 kg has not been achieved, steady and substantial progress has been made to date. Changes to the Solid Waste Regulations are necessary to continue the progress towards 300 kg/person; these regulatory updates are in progress.



Ultimate Goal:

Our ultimate goal is reduced solid waste disposal for a better environment and stronger economy. This includes the direct goal of 300 kg/person. With the impact of the proposed regulatory changes, the continued support of our municipal partners and the RRFB, we will continue to work on meeting the 300 kg/person target.

Mandate: *Environmental Goals and Sustainable Prosperity Act (EGSPA)*

Outcome:

Reduced Greenhouse Gas emissions (GHGs) into the atmosphere for positive impacts on the economy, ecosystems, and human health.

Measure:

Annual provincial GHG emissions are measured by two separate annual reports: (1) the National GHG Inventory Report (NIR) from Environment Canada and (2) the annual GHG report from NSPI of their electricity GHG, as required by our GHG regulations. To measure progress toward the *EGSPA* target, total GHG emissions in Nova Scotia each year are compared with our GHG emissions in 1990 and the target set for 2020.

Target:

Our *EGSPA* target is GHG output in 2020 that is 10 per cent below 1990 output. Therefore, our actual target for 2020 is 18.2 million tonnes (Mts).

Note: The latest *National Inventory Report* provided annually by Environment Canada was released in April, 2014. Importantly, this report revised previous years GHG figures, including the base year (1990) GHG for each province. We rely on the base year (1990) estimate to determine the actual tonnage of GHG reduction which we must reach in 2020 to meet our *EGSPA* target (10 per cent below 1990).

Since the base year (1990) GHG has now been revised, our target GHG for 2020 is therefore revised proportionately. The base year (1990) GHG for Nova Scotia has now been officially changed to 20.2 Mts, up from 19.1, which had been previously reported by NSE. It means our revised 2020 target for total GHG is now 18.2 Mts, instead of 17.2 Mts.

Why this Measure and Target(s)?

Continued warming due to the release of GHG into the atmosphere has substantial negative impacts on the environment, economy, food supply, human health, and ecosystems. In meeting our responsibility to reduce our GHG emissions to a scientifically accepted level, Nova Scotia has adopted the regional GHG target for 2020 set by New England Governors/Eastern Canadian Premiers in their 2001 "Climate Change Action Plan." This regional goal is to reduce annual GHGs by 2020 to a level that is 10 per cent below our GHG level in 1990.

Strategic Actions to Achieve the Target:

- The main strategic action to achieve the *EGSPA* target is our "Climate Change Action Plan" of January 2009. This is currently over ninety per cent complete. Outstanding items are ongoing. The first action established through this plan was the creation of the *Greenhouse Gas Emissions Regulations* (August 2009) for the Electricity sector. This groundbreaking regulation sets progressively lower caps on GHG produced by our electricity sector.
- Nova Scotia and the Federal Government signed a Coal-fired GHG *Equivalency Agreement* in June, 2014. This agreement allows the Federal Government to exempt Nova Scotia from the proposed Federal regulation of coal-fired GHG as long as Nova Scotia meets its existing 2020 targets and adds additional reduction targets for 2021-2030. This project is now complete.
- In 2014-2015, NSE updated our GHG Monitoring and Reporting system and sources. This update included preparation and signing of a *Memorandum of Agreement* (MOA) with Environment Canada, to allow NSE direct access to the annual GHG reports which Large Final Emitters in Nova Scotia must file.
- This Agreement also increases our understanding of GHG sinks, sources, and opportunities in the Nova Scotia forestry and agriculture sectors.
- Incorporated GHG emissions as a consideration in Environmental Assessments of large industrial projects – e.g. – the recently proposed liquefied natural gas (LNG) plant.

2014-2015 Results:

The latest *National Inventory of Greenhouse Gas* for Nova Scotia released in April 2015 states the total GHG for Nova Scotia was 18.3 Mts in 2013, the latest year on record. The GHG output in 2013 was a significant reduction from the prior year ((19.6 Mts in 2012), and continues the steadily declining GHG since *EGSPA* was legislated (2007). This performance puts us in line to meet or exceed the 2020 target of *EGSPA*.

Ultimate Goal:

Our ultimate goal is to reduce GHGs into the atmosphere for positive impacts on the economy, ecosystems, and human health. This includes the direct goal of reaching 10 per cent below 1990 levels by 2020. The indirect goal is a transformation of our energy supply and demand to a more stable and sustainable basis. Our early actions on climate change have shown that Nova Scotia can have economic expansion while having GHG reduction.

Mandate: *Environmental Goals and Sustainable Prosperity Act (EGSPA)*

Outcome: Clean Air for human health and environmental protection.

Measures:

- Ambient ground-level ozone, averaged over three years, in parts per billion (ppb).
- Ambient fine particulate matter (airborne particles that are 2.5 microns or less in diameter $PM_{2.5}$), measured annually and averaged over three consecutive years, in micrograms per cubic metre ($\mu g/m^3$).

*Note: The Canada-wide Standards (CWS) for Particulate Matter and Ozone have been retired in Canada and replaced with the Canadian Ambient Air Quality Standards (CAAQS) as detailed on pages 27-28. This year, 2014, will be the last report on the CWS and the first year for Air Zone reporting based on the CAAQS for Particulate Matter and Ozone.

Targets:

- Achieve CAAQS in each of Nova Scotia's four air zones:
 - 63 ppb ground-level ozone or less, three-year average of the annual 4th highest daily maximum 8-hour average concentration by 2015.
 - 28 $\mu g/m^3$ or less of $PM_{2.5}$, three-year average of the annual 98th percentile (98th percentile of a set of data is the point where 98 per cent of the data is below it) of the daily 24-hour average concentrations by 2015.
 - 10 $\mu g/m^3$ or less of $PM_{2.5}$, three-year average of the annual average concentrations by 2015.

Why this Measure and Target(s)?

Ground-level ozone and fine particulate matter are pollutants that contribute to degraded air quality and the formation of smog, which have negative effects on human health and the environment. The purpose of the measures and targets is to inform decisions that improve air quality in Nova Scotia's air zones.

Strategic Actions Taken to Achieve the Target:

- Identified what level of actions are required to manage air quality in Nova Scotia's four air zones.
- Worked with stakeholders to identify actions to reduce ambient air pollution and to keep clean areas clean.

2014-2015 Results:

Canada-Wide Standard

In 2014, the Canada-Wide Standards (CWS) for Fine Particulate Matter and Ozone were achieved. The CWS results were:

4 th highest 8-hour averages of ground-level ozone, measured annually and averaged over three consecutive years				98 th percentile of 24-hour averages of fine particulate matter, measured annually and averaged over three consecutive years			
	HRM	CBRM	Standard (Achieve 65 ppb or less)		HRM	CBRM	Standard (Achieve 30 $\mu\text{g}/\text{m}^3$ or less)
2012-2014	52	50	65	2012-2014	13	16	30

Canadian Ambient Air Quality Standards

As noted above (page 26), beginning in 2015, NSE will no longer report on CWS and will instead use the CAAQS for Air Zone reporting. The CAAQS are more stringent than the CWS standard thresholds. The CAAQS also add four categories of management actions, represented by colours (see table below), that should be taken even when the CAAQS are achieved, to prevent air quality deterioration and CAAQS exceedances.

Air Management Threshold Values and Actions				
Management Level	Management Actions	Air Management Threshold Values		
		Ozone 8-hour (ppb)	PM _{2.5} 24-hour ($\mu\text{g}/\text{m}^3$)	PM _{2.5} Annual ($\mu\text{g}/\text{m}^3$) (Achieve 10 or less)
Red	Actions for Achieving Air Zone CAAQS	53	28	10
Orange	Actions for Preventing CAAQS Exceedance	56	19	6.4
Yellow	Actions for Preventing air quality Deterioration	50	10	4
Green	Actions for Keeping Clean Areas Clean	0	0	0

In 2014 (based on 2012-2014 data), the CAAQS for Fine Particulate Matter and Ozone were achieved in all four Air Zones in Nova Scotia. The Central air zone was in the yellow air zone management level that requires actions for preventing air quality deterioration and the other three air zones were in the orange level that requires actions for preventing CAAQS exceedance.

Year	Number of air zones achieving CAAQS	Air Zone (AZ) Management Level Determination (Red, Orange, Yellow, or Green)			
		Central AZ	Eastern AZ	Northern AZ	Western AZ
2012-2014	4	Yellow	Orange	Orange	Orange

For more information on the CAAQS, please see the Nova Scotia Air Zone Report at <http://www.novascotia.ca/nse/air/>

Ultimate Goal:

The ultimate goal is clean air for human health and environmental protection. This includes achieving the targets (page 26) for this measure as per the CAAQS.

Mandate: *Environmental Goals and Sustainable Prosperity Act (EGSPA)*

Outcome:

Clean surface water for human health and environmental protection.

Measure:

Percentage of wastewater treatment facilities that provide at least primary treatment.

Target:

All municipal wastewater treatment facilities provide at least primary treatment by 2020.

Why this Measure and Target(s)?

In Nova Scotia, the discharge of untreated wastewater results in beaches closed to swimming, waters closed to shellfish harvesting, and the odor and aesthetics associated with raw discharges affecting our ecotourism potential. Our streams, estuaries and coastal waters can be threatened by the substances found in inadequately treated wastewater and drinking water can become contaminated.

By ensuring that all facilities have at least primary treatment, we ensure a level of protection against the adverse effects of wastewater discharges.

Strategic Actions to Achieve the Target:

- Worked with municipalities to implement the Canada-wide Municipal Wastewater Effluent (MWE) Strategy.
- Completed new provincial wastewater standard. NSE is engaging municipal stakeholders in the review of the provincial wastewater standard.
- Worked with the federal government to discuss roles and responsibilities related to federal Wastewater Regulations.

2014-2015 Results:

Approximately 55 per cent of Nova Scotians dispose of their wastewater into a central sewer collection system; the remaining 45 per cent utilize individual on-site septic systems. There are currently 141 municipal central sewer collection systems in the province.

In 2014-2015, no new systems were commissioned. Currently, 131 facilities (93 per cent) have at least a primary level of treatment. Of the remaining 10 facilities with raw wastewater discharge, one is currently in the process of constructing a new treatment facility and another is beginning the pre-design process.

Year	2008- 2009	2009- 2010	2010- 2011	2011- 2012	2012- 2013	2013- 2014	2014- 2015
Percentage	90	91	91	92	92	93	93

To bring the remaining municipal communities with raw discharge up to the goal of a minimum of primary treatment will involve very large capital expenditures. NSE will continue to work with our provincial and municipal partners on our plan of meeting the objectives of the Canada-wide Municipal Wastewater Effluent Strategy in a way that considers environmental risk, financial implications and innovative solutions.

Ultimate Goal:

The ultimate goal is clean surface water for human health and environmental protection. This includes our ongoing target to have all municipal wastewater treatment facilities provide at least primary treatment by 2020. NSE is contributing to this goal by developing an implementation plan for the MWWE Strategy. NSE will continue to consult with municipalities on the development of this plan.

Appendix A

Annual Report under Section 18 of the *Public Interest Disclosure of Wrongdoing Act*

The *Public Interest Disclosure of Wrongdoing Act* was proclaimed into law on December 20, 2011.

The *Act* provides for government employees to be able to come forward if they reasonably believe that a wrongdoing has been committed or is about to be committed and they are acting in good faith.

The *Act* also protects employees who do disclose from reprisals, by enabling them to lay a complaint of reprisal with the Labor Board.

A Wrongdoing for the purposes of the *Act* is:

- a) a contravention of provincial or federal laws or regulations
- b) a misuse or gross mismanagement of public funds or assets
- c) an act or omission that creates an imminent risk of a substantial and specific danger to the life, health or safety of persons or the environment, or
- d) directing or counselling someone to commit a wrongdoing

Information Required under Section 18 of the <i>Act</i>	Fiscal Year 2014-2015
The number of disclosures received	Nil
The number of findings of wrongdoing	Nil
Details of each wrongdoing	
Recommendations and actions taken on each wrongdoing	